

Bradley Kohler

MECHATRONICS ENGINEER · UNIVERSITY UNDERGRAD

Waterloo, ON, Canada

✉ studentbrad.github@gmail.com | 📧 studentbrad | 🌐 studentbrad

Summary

Mechatronics engineer at McMaster University.

Coding is my passion.

I like to solve new, challenging problems.

My programming skills include (but are not limited to):

- BASH, C/C++, Python and Java
- Microcontroller and Microprocessor firmware (MATLAB/Simulink, Labview, ARM Mbed, STM32, Nordic, Qualcomm Snapdragon)
- Embedded Operating Systems (Linux, mbedOS, ChibiOS, FreeRTOS)
- PCB hardware design (Verilog HDL, NI Multisim, Eagle)
- Systems design (Maplesim, AutoCAD, SolidWorks)
- Mathematics (Maple18, numpy, Eigen, MATLAB)

Work Experience

Northern Digital Inc.

Waterloo, Ontario

ADVANCED RESEARCHER & FIRMWARE DEVELOPER

May 2018 - PRESENT

- Designed and programmed embedded C firmware for active tool tracking probe with sensor data fusion for 3DG system.
- Designed and implemented three sensor data fusion algorithms for 3D tracking systems including 3DG anise fusion, local attitude estimation and local gravity estimation.
- Developed Python libraries for sensor fusion visualization and statistical analysis.
- Developed C application for 3DG inertial data simulation.
- Developed embedded C sensor drivers for ARM processors using low level HAL with platforms Nordic, Snapdragon and STM32.
- Worked with embedded C libraries for signal generation and reception.

McMaster University

Hamilton, Ontario

STUDENT RESEARCHER & TEACHING ASSISTANT

May 2017 - Sept. 2017

- Developed embedded C software for safety critical systems.
- Implemented pacemaker stateflow on MATLAB simulink which was uploaded to a custom prototype PCB.
- Produced software documentation for system design.

Emnor Mechanical Inc.

Hamilton, Ontario

STUDENT EMPLOYEE & SOFTWARE DEVELOPER

May 2016 - Sept. 2016

- Developed inventory management software for large warehouses.
- Developed large SQL databases for thousands of orders and parts using Microsoft Access.
- Managed company payroll, invoices and purchase orders.

McMaster University

Hamilton, Ontario

SOFTWARE ENGINEERING TEACHING ASSISTANT

May. 2015 - Dec. 2015

- Prepared lessons for students and presentations for laboratories.
- Graded student software laboratory test submissions.

Emnor Mechanical Inc.

Hamilton, Ontario

MECHANICAL REPAIRMAN & SHOP EMPLOYEE

May 2015 - Sept. 2015

- Reverse engineered old damaged parts and produced CAD drawings using Faro Arm.
- Disassembled, repaired and reassembled centrifugal pumps.
- Maintained company shipping department and inventory.

Education

McMaster University

Hamilton, Ontario

MECHATRONICS ENGINEERING CO-OP

Sept. 2014 - PRESENT

- Mechatronics IV
- McMaster Entrance Award Scholarship

Galt Collegiate Institute

Cambridge, Ontario

SECONDARY SCHOOL GRADUATE

Sept. 2010 - June 2014

- 150th Anniversary Award Recipient
- Honors Student

Extracurricular Activity

McMaster Canada-Israel Startup Competition

Hamilton, Ontario

STARTUP COMPANY FOUNDER

June, 2019

- Winner of the 2019 McMaster Canada-Israel Startup Competition.
- Designed and programmed numerous technologies to accurately automate patient fluid intake.
- Traveled to Tel Aviv, Israel to present technologies to companies, universities and nursing homes.

First LEGO League

Waterloo, Ontario

VOLUNTEER

May, 2019 - Aug. 2019

- Assisted First LEGO League groups with competitions and events.

Hack The North

Waterloo, Ontario

HACKATHON MENTOR

Sept. 2018

- Assisted Hackathon groups with embedded system problems.

McMaster Sumobots

Hamilton, Ontario

CLUB MEMBER

Jan. 2018 - April 2018

- Gained experience working in a small group on embedded systems.
- Worked with CAD software to develop controller casing.
- Competed against other groups in the final competition.

Ronald McDonald House

Hamilton, Ontario

VOLUNTEER

Jan. 2017 - May 2018

- Gained experience working with the community to help sick children indirectly.
- Assisted with cleaning the facility and baked desserts.